Jameco Part Number 213720

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Declaration of RoHS Conformity

To minimize the environmental impact and take more responsibility to the earth we live, MEAN WELL hereby confirms that the following product series comply with Directive 2002/95/EC of the European Parliament - RoHS (Restriction of Hazardous Substances).

Content of Compliance

Lead	<0.1 % by weight (1000 ppm)
Mercury	<0.1 % by weight (1000 ppm)
Cadmium	<0.01 % by weight (100 ppm)
Hexavalent Chrome (Cr^{+6})	<0.1 % by weight (1000 ppm)
PBBs	<0.1 % by weight (1000 ppm)
PBDEs	<0.1 % by weight (1000 ppm)

Product Series

Please refer to the attached list for details.

Delivery

The actual delivery date for RoHS compliance products will depend on our inventory status.
Please contact our sales representatives for details.

How to Recognize

The serial number on each PSU originally was Cxxxxxxxxx and right now will be changed to Rxxxxxxxxx or Exxxxxxxxx (or add “R” for serial number that only specify the production weeks) for RoHS compliance products for the ease of identification.

Jerry Lin / President
MEAN WELL Enterprises Co., Ltd.

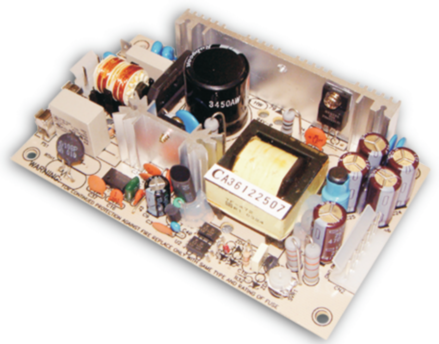
Product Family	Series
G3	RS-25/35/50/75/100/150, RD-35/50/65/85/125, RID-50/65/85/125, RT-50/65/85/125, RQ-50/65/85/125
G2	S-25/40/60/100F/150/240, T-40, D/ID/T/IT/Q/IQ-60, D/T/Q-120, SC-150
PFC	SP-75/100/150/200/320/480/500/750, USP-225/350, TP-75/100/150, QP-100/150/200/320/375
AD	ADS-55/155, AD-55/155, ADD-55/155
CL/PL	CLG-60/100, PLN-30/60/100
DIN	MDR-20/40/60, DR-30/45/60/75/100/120, DRH-120, DRP-240/480/480S, DRT-240/480/960, DR-RDN20, DR-UPS40
Modular	MP-450/650/1K0, MS-75/150/300, MD-100
Parallel	PSP-500/600/1000/1500, RSP-1000/1500, RCP-1000, RCP-1U
Open Frame	NFM-05/10/15/20, PM-05/10/15/20, PS/PD-25, PS-35, PS/PD/PT-45, PS/PD/PT-65, RPD/RPT-65, PD-110, PQ-100, PPQ-100, PPS/PPT-125, LPS-50/75/100, LPP-100/150, ASP-150, PPS-200, PID-250, MPS-30, MPS/MPD/MPT-45, RPS/RPD/RPT-60, MPS/MPD/MPT-65, RPS/RPD/RPT-75, MPS/MPD/MPT/MPQ-120, MPS/MPD/MPT/MPQ-200
Charger	GC-30, PA/PB/PS-120, ESC/ESP-120, ESC/ESP-240, PB-300/360
Adaptor	GS-06/15/18/25, ES-18/25, P25, P30, P40, P50, P66, U65S, MES-30/50, ATX-100, AS-120P
PC/IPC Power	YP-350J, IPC-200/250/300
DC/DC Converter	SD-25/50/100/150/200/350, SDM30, ASD10H/15H, NSD10/15, SBT, SFT, DET, SRS, SUS, SPR, SPU, SCW, SLW, SKE SKA, DCW, DLW, DKE, DKA, TKA
Inverter	TN/TS-1500, A301/A302
Power Cord	YP** + YC**

***** For other products not listed above, please contact our sales representatives for availability***

2007.04 update

45W Single Output Switching Power Supply

PS-45 series



■ Features :

- Universal AC input/Full range
- Low leakage current<0.5mA
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 65KHz
- 2 years warranty

SPECIFICATION

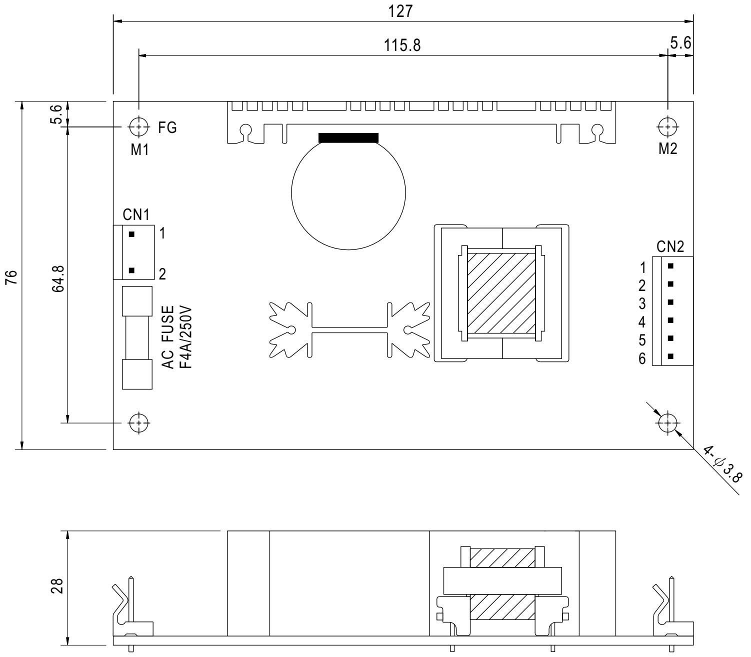
MODEL		PS-45-3.3	PS-45-5	PS-45-7.5	PS-45-12	PS-45-13.5	PS-45-15	PS-45-24	PS-45-27	PS-45-48
OUTPUT	DC VOLTAGE	3.3V	5V	7.5V	12V	13.5V	15V	24V	27V	48V
	RATED CURRENT	8A	8A	5.4A	3.7A	3.3A	3A	1.9A	1.7A	1A
	CURRENT RANGE	0 ~ 10.7A	0 ~ 10.5A	0 ~ 7A	0 ~ 4.4A	0 ~ 3.9A	0 ~ 3.5A	0 ~ 2.2A	0 ~ 1.95A	0 ~ 1.1A
	RATED POWER	26.4W	40W	40.5W	44.4W	44.6W	45W	45.6W	45.9W	48W
	OUTPUT POWER (max.)	Rated output power for convection; 52W (+3.3V : 35W) with 18 CFM min.								
	RIPPLE & NOISE (max.) Note.2	80mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p	100mVp-p
	VOLTAGE ADJ. RANGE	3.14 ~ 3.63V	4.75 ~ 5.5V	7.13 ~ 8.25V	11.4 ~ 13.2V	12.8 ~ 14.85V	14.25 ~ 16.5V	22.8 ~ 26.4V	25.65 ~ 29.7V	45.6 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±3.0%	±3.0%	±3.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%	±2.0%
	SETUP, RISE TIME	800ms, 30ms at full load								
	HOLD UP TIME (Typ.)	60ms at full load								
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~370VDC								
	FREQUENCY RANGE	47 ~ 440Hz								
	EFFICIENCY(Typ.)	69%	74%	75%	76%	77%	77%	78%	78%	78%
	AC CURRENT (Typ.)	0.8A/115VAC 0.56A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 15A/115VAC 30A/230VAC								
	LEAKAGE CURRENT	<0.75mA / 240VAC								
PROTECTION	OVERLOAD	53 ~ 75W(3.3V : 36 ~ 55W) rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.								
	OVER VOLTAGE	3.8 ~ 4.46V	5.75 ~ 6.75V	8.63 ~ 10.1V	13.8 ~ 16.2V	15.5 ~ 18.2V	17.25 ~ 20.25V	27.6 ~ 32.4V	31 ~ 36.45V	55.2 ~ 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed.								
ENVIRONMENT	WORKING TEMP.	-10 ~ +60℃ (Refer to output load derating curve)								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-20 ~ +85℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.05%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, Period for 60min.each along X, Y, Z axes								
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL60950-1, TUV EN60950-1 Approved								
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC								
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC								
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B								
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3								
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, Light industry level, criteria A								
OTHERS	MTBF	300.7K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	127*76*28mm (L*W*H)								
	PACKING	0.19Kg; 72pcs/15.6Kg/1.35CUFT								

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.
5. Mounting holes M1 and M2 should be grounded for EMI purposes.

Mechanical Specification

Unit:mm



AC Input Connector (CN1) : Molex 5277-02 or equivalent

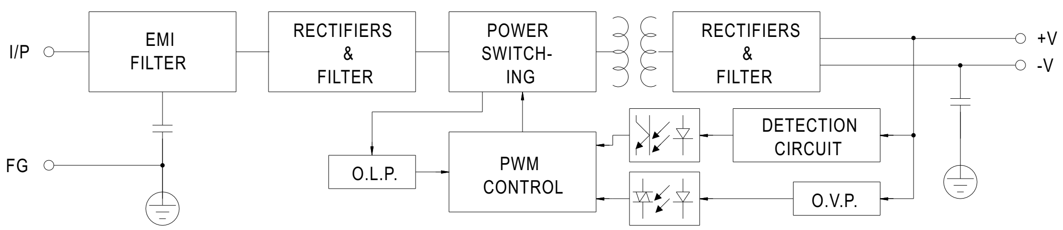
Pin No.	Assignment	Mating Housing	Terminal
1	AC/N	Molex 5195 or equivalent	Molex 5194 or equivalent
2	AC/L		

DC Output Connector (CN2) : Molex 5273-06 or equivalent

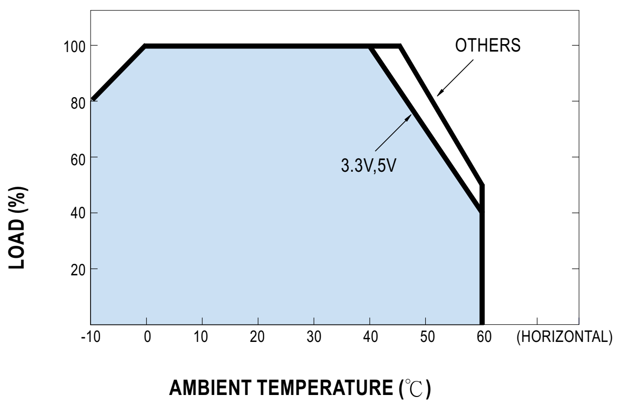
Pin No.	Assignment	Mating Housing	Terminal
1,2,3	+V	Molex 5195 or equivalent	Molex 5194 or equivalent
4,5,6	-V		

Block Diagram

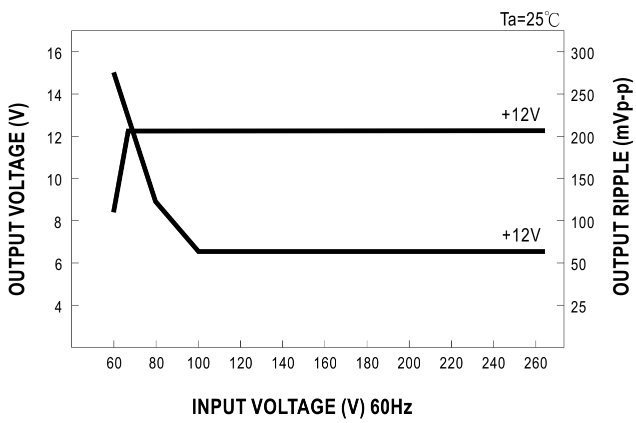
fosc : 65KHz



Derating Curve



Static Characteristics (12V)



Quality Engineering Test Report

SERIES: PS-45 40W SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: **A.PS-45-5 5V / 8A** **D. PS-45-24 24V / 1.9A**

B.PS-45-12 12V / 3.7A **E. PS-45-48 48V / 1A**

C.PS-45-15 15V / 3A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING O/P:FULL LOAD SPEC:90~264VAC	A :61.86VAC~267VAC	P
2	LINE REGULATION	I/P:85~264VAC O/P:FULL LOAD SPEC: A: ±1% B: ±1% C: ±1% D: ±1% E: ±1%	A: +0.12% ~ +0.12% B: 0% % ~ 0 % C: 0% % ~ 0 % D: 0% % ~ 0 % E: -0.05 % ~ 0.012 %	P
3	LOAD REGULATION	I/P:230VAC O/P: MIN. TO FULL LOAD SPEC: A: ±3% B: ±2% C: ±2% D: ±2% E: ±2%	A: -0.12% ~ +0.12% B: -0.05% ~ +0.05% C: -0.03% ~ 0 % D: -0.02% ~ 0 % E: -0.025% ~ 0.025 %	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:90~264VAC O/P: MIN. TO FULL LOAD SPEC: A: ±3% B: ±2% C: ±2% D: ±2% E: ±2%	A: -0.3% ~ +0.12% B: -0.05% ~ +0.05% C: +0.08% ~ +0.12% D: +0.02% ~ +0.07% E: -0.064% ~ +0.03%	P
5	RIPPLE&NOISE	I/P:230VAC O/P: FULL LOAD SPEC: A:100mV B:100mV C:100mV D:100mV E:100mV	A: 66mV B: 36mV C: 18mV D: 11mV E: 36mV	P
6	AC INPUT CURRENT	I/P:230VAC O/P:FULL LOAD SPEC: 0.7A	A:0.47A	P
7	MAX. INRUSH CURRENT	I/P:230VAC O/P:FULL LOAD SPEC: 40A	A:36.90A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD SPEC: -5%~+10% A:5.5~4.75V B:13.2~11.4V C:16.5~14.25V D:26.4~22.8V D:52.8~45.6V	A: 4.34 ~ 6.11 B: 10.09 ~ 13.79 C: 13.7 ~ 19.05 D: 20.74 ~ 27.4 E: 43.4 ~ 61.9	P
9	SET UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:800ms	A:518.86mS	P
10	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD SPEC:20mS	A:82.18mS	P
11	EFFICIENCY	I/P:230VAC O/P: FULL LOAD SPEC: A:74% B:76% C:77% D:78% E:78%	A: 76.15% B: 78.62% C: 80.70% D: 82.55% E: 81.98%	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
12	OVER CURRENT PROTECTION	I/P:230VAC O/P: TESTING SPEC: A: 53~75W B: 53~75W C: 53~75W D: 53~75W E: 53~75W	A: 59.92W B: 63.05W C: 60.88W D: 66.71W E: 57.43W	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:MIN. LOAD SPEC:115%~135% A : 5.75V~6.75V B :13.8V~16.2V C :17.25V~20.25V D :27.6V~32.4V E :55.2V~64.8V	A: 6.10V B: 13.89V C: 19.06V D: 28.2V E: 61.2V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC:L-FG--<0.75mA N-FG--<0.75mA	A: L-FG:0.46mA N-FG:0.48mA	P
15	INSULATION RESISTANCE	SPEC:O/P-FG 500VDC/100M Ohms MIN. I/P-O/P 500VDC/100M Ohms MIN. I/P-FG 500VDC/100M Ohms MIN.	A: O/P-FG :>100M Ohms I/P-O/P :>100M Ohms I/P-FG :>100M Ohms	P
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3000VAC/ 1 sec (10mA CUT-OFF) I/P - FG: 1500VAC/ 1 sec (10mA CUT-OFF) O/P - FG : 500VAC/1sec (10mA CUT-OFF)	A : NO BREAK I/P-O/P :3.29mA I/P-FG :3.49mA O/P- FG :1.88mA	P
17	BURN-IN TEST	I/P: 230VAC O/P:FULL LOAD TA:22.6ºC BURN-IN DURATION : 2 hrs	A : NON BREAK	P
18	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:83 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-9.4ºC	AFTER 1 hrs POWER ON OK	P
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230 VAC O/P:FULL LOAD AMBIENT TEMPERATURE:43.2ºC	AFTER 16.5 hrs NON BREAK	
		3.ACCELERATED LIFE TEST I/P:267 VAC O/P:FULL LOAD POWER ON :3 min POWER OFF :5 sec AMBIENT TEMPERATURE:85ºC AMBIENT HUMIDITY:95%	AFTER 6 hrs NON BREAK	
19	TEMPERATURE RISE TESTT rise OF PARTS	I/P :230VAC AFTER 2 hrs BURN-IN O/P :FULL LOAD TA:22.6ºC (see table below)		P

POSITION	P/N	TEMP	T rise
BD1	BRIDGE DIODE	48.3ºC	25.7ºC
Q1	MAIN TRANSFORMER COIL	73.4ºC	50.8ºC
T1	MAIN TRANSISTOR	63.1ºC	40.5ºC
T1	MAIN TRANSFORMER CORE	71.6ºC	49ºC
D4	O/P DIODE	77.1ºC	54.5ºC
C5	I/P FILTER CAPACITOR	51.1ºC	28.5ºC
C22	O/P FILTER CAPACITOR	53.6ºC	31ºC
D1	CLAMP DIODE	80.1ºC	57.5ºC
LF1	LINE FILTER	37.3ºC	14.7ºC

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	VERDICT
20	LIFE CYCLE	SUPPOSE C22 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25ºC Tc22: 56ºC Life time: 92025.54 hrs I/P:230VAC O/P:FULL LOAD Ta:40ºC Tc22: 71ºC Life time: 32535.94 hrs	P
21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	FUSE : 4A/250V GFE BRIDGE DIODE : LT KBJ408G LINE FILTER : TF484 ET-20V TRANSFOMER : TF470 ER-28 POWER SWITCHER : K2545 TO3P OUTPUT DIODE : D15SC4M TO-220 OUTPUT CAPACITOR : ELNA 105ºC RJH 820uF/ 16V INPUT CAPACITOR : HITACHI 85ºC 100uF/ 400V P.C.B : PS-65 CEM-1 2 OZ SS 127mmx76mmx30mm	

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
19971210	PS-45	PASS	H.C.LIOU	Max Lin
20010216	PS-45-48	PASS	SAM	Max Lin